

The following is a complete listing of all claims in the application, with an indication of the status of each:

Listing of claims:

1 1 (Currently amended). ~~An~~ A computer-implemented auction method for holding an
2 auction for a product comprising the steps of:

3 receiving bids from at least one computer or from multiple computers within a
4 network of computers, for each product type of multiple product types in a
5 transaction, that include minimum desired volumes and maximum desired volumes
6 and evaluation prices for said product;

7 generating, using computing resources, a finite set of bids that include as an
8 element said bids that were received from said at least one computer or from multiple
9 computers within said network of computers; ~~and~~

10 employing dynamic programming using said computing resources to generate,
11 using said ~~bid set~~ bids that were received in said receiving bids step, a subset of bids
12 wherein ~~the~~ a maximum gain is obtained within a range represented by ~~the~~ a count of
13 said product available for sale; and

14 identifying or accepting a bid from said subset of bids.

1 2 (Original). The auction method according to claim 1, wherein said evaluation prices
2 for said product are represented as a non-linear function relative to the desired volume
3 of said product type in said transaction.

1 3 (Currently amended). The auction method according to claim 1, further comprising
2 the steps of:

3 allocating a two-dimensional array V to a memory area by using said dynamic
4 programming using said computing resources;

5 initializing said two-dimensional array V; and
6 recursively solving the recursive equation for said two-dimensional array V,
7 wherein

8
$$V(k, j) = \max \{V(k+1, j), V(k, j+1), \max_{l_k \leq n \leq h_k} \{V(k+1, j+x) + e_k(x)\}\}$$

9 is used as the recursive equation, where V(k, j) denotes said two-dimensional array V
10 populated with said evaluation prices; where k denotes an integer equal to or greater
11 than 1 and equal to or smaller than n; j denotes an integer equal to or greater than 0
12 and equal to or smaller than s; n denotes the number of bids; s denotes the number of
13 products available for the transaction; e_k denotes the evaluation price when x units of
14 products are purchased according to the bid b_k ; l_k denotes the minimum volume of the
15 bid b_k ; and h_k denotes the maximum volume of the bid b_k .

1 4 (Original). The auction method according to claim 3, wherein a bid according to
2 which said product is optimally distributed is selected by back tracking of said
3 two-dimensional array V from the element on the smallest row and in the smallest
4 column.

1 5 (Currently amended). The auction method according to claim 1, further comprising:
2 allocating two-dimensional arrays V and Q to a memory area by using said
3 dynamic programming;
4 initializing said two-dimensional arrays V and Q; and
5 recursively solving recursive equations for said two-dimensional arrays V and
6 Q using said computing resources,
7 wherein said evaluation prices for said product represent a linear function
8 relative to the volumes for said product desired for said transaction, and
9 wherein

$$V(k, j) := \begin{cases} V(k+1, j) \\ V(k, j+1) \\ V(k, j+1) + e_k & \text{if } l_k \leq Q(k, j+1) < h_k \\ V(k+1, j+1) + e_k l_k \end{cases}$$

$$Q(k, j) := \begin{cases} Q(k, j+1) + 1 & \text{(if } V(k, j) = V(k, j+1) + e_k) \\ l_k & \text{(if } V(k, j) = V(k+1, j+1) + e_k l_k) \\ Q(k, j+1) & \text{(if } V(k, j) = V(k, j+1)) \\ 0 & \text{(otherwise)} \end{cases}$$

is employed as said recursive equation, where $V(k, j)$ denotes said two-dimensional array V populated with said evaluation prices; where $Q(k, j)$ denotes said two-dimensional array Q populated with said count of said product available for sale;
where k denotes an integer equal to or greater than 1 and equal to or smaller than n ; j denotes an integer equal to or greater than 0 and equal to or smaller than s ; n denotes the number of bids; s denotes the number of products available for the transaction; e_k denotes the evaluation price when x units of products are purchased according to the bid b_k ; l_k denotes the minimum volume of the bid b_k ; and h_k denotes the maximum volume of the bid b_k .

6 (Original). The auction method according to claim 5, wherein a bid according to which said product is optimally distributed is selected by back tracking of said two-dimensional array V from the element on the smallest row and in the smallest-column.

7-12. Canceled

1 13 (Currently amended). An auction system of computing resources for holding an
2 auction for a product comprising:

3 means for receiving bids from at least one computer or from multiple
4 computers within a network of computers, for each product type of multiple product
5 types in a transaction, that include minimum desired volumes and maximum desired
6 volumes and evaluation prices for said product;

7 means for generating, using computing resources, a finite set of bids that
8 include as an element said bids that were received from at least one computer or from
9 multiple computers within said network of computers; and

10 means for employing dynamic programming using said computing resources
11 to generate, using said ~~bid-set~~ bids that were received from said at least one computer
12 or from multiple computers within said network of computers, a subset of bids
13 wherein ~~the~~ a maximum gain is obtained within a range represented by ~~the~~ a count of
14 said product available for sale; and

15 means for identifying or accepting a bid from said subset of bids.

1 14 (Original). The auction system according to claim 13, wherein said evaluation
2 prices for said product are represented as a non-linear function relative to the desired
3 volume of said product type in said transaction.

1 15 (Currently amended). The auction system according to claim 13, further
2 comprising:

3 means for allocating a two-dimensional array V to a memory area by using
4 said dynamic programming using said computing resources;

5 means for initializing said two-dimensional array V;

6 and recursively solving the recursive equation for said two-dimensional array
7 V, wherein

8 $V(k, j) := \max \{V(k+1, j), V(k, j+1), \max_{1 \leq n \leq h_k} \{V(k+1, j+x)+e_k(x)\} \}$

9 is used as the recursive equation, where $V(k, j)$ denotes said two-dimensional array V
10 populated with said evaluation prices; where $Q(k, j)$ denotes said two-dimensional
11 array Q populated with said count of said product available for sale; where k denotes
12 an integer equal to or greater than 1 and equal to or smaller than n ; j denotes an
13 integer equal to or greater than 0 and equal to or smaller than s ; n denotes the number
14 of bids; s denotes the number of products available for the transaction; e_k denotes the
15 evaluation price when x units of products are purchased according to the bid b_k ; l_k
16 denotes the minimum volume of the bid b_k ; and h_k denotes the maximum volume of
17 the bid b_k .

1 16 (Original). The auction system according to claim 15, further comprising:
2 means for selecting a bid according to which said product is optimally
3 distributed by back tracking of said two-dimensional array V from the element on the
4 smallest row and in the smallest column.

1 17 (Currently amended). The auction system according to claim 13, further
2 comprising:
3 means for allocating two-dimensional arrays V and Q to a memory area by
4 using said dynamic programming using said computing resources;
5 means for initializing said two-dimensional arrays V and Q ;
6 and means for recursively solving recursive equations for said
7 two-dimensional arrays V and Q , wherein said evaluation prices for said product
8 represent a linear function relative to the volumes for said product desired for said
9 transaction, and
10 wherein

$$V(k, j) := \begin{cases} V(k+1, j) \\ V(k, j+1) \\ V(k, j+1) + e_k & \text{if } l_k \leq Q(k, j+1) < h_k \\ V(k+1, j+1) + e_k l_k \end{cases}$$

$$Q(k, j) := \begin{cases} Q(k, j+1) + 1 & \text{(if } V(k, j) = V(k, j+1) + e_k) \\ l_k & \text{(if } V(k, j) = V(k+1, j+1) + e_k l_k) \\ Q(k, j+1) & \text{(if } V(k, j) = V(k, j+1)) \\ 0 & \text{(otherwise)} \end{cases}$$

is employed as said recursive equation, where $V(k, j)$ denotes said two-dimensional array V populated with said evaluation prices; where $Q(k, j)$ denotes said two-dimensional array Q populated with said count of said product available for sale;
 where k denotes an integer equal to or greater than 1 and equal to or smaller than n ; j denotes an integer equal to or greater than 0 and equal to or smaller than s ; n denotes the number of bids; s denotes the number of products available for the transaction; e_k denotes the evaluation price when x units of products are purchased according to the bid b_k ; l_k denotes the minimum volume of the bid b_k ; and h_k denotes the maximum volume of the bid b_k .

(Original). The auction system according to claim 17, wherein a bid according to which said product is optimally distributed is selected by back tracking of said

3 two-dimensional array V from the element on the smallest row and in the smallest
4 column.

1 19-24. Canceled

1 25 (Currently amended). A computer-readable storage medium on which a program
2 for holding an auction for a product is stored, said program ~~permitting~~ enabling a
3 computer computing resources to perform:

4 a ~~function~~ process for receiving bids from at least one computer or from
5 multiple computers within a network of computers, for each product type of multiple
6 product types in a transaction, that include minimum desired volumes and maximum
7 desired volumes and evaluation prices for said product;

8 a ~~function~~ process for generating, using computing resources, a finite set of
9 bids that include as an element said bids that were received from said at least one
10 computer or from multiple computers within said network of computers; ~~and~~

11 a ~~function~~ process for employing dynamic programming using said computing
12 resources to generate, using said ~~bid-set~~ that were received while using said process
13 for receiving bids, a subset of bids wherein ~~the~~ a maximum gain is obtained within a
14 range represented by ~~the~~ a count of said product available for sale; ~~and~~

15 a process for identifying or accepting a bid from said subset of bids.

1 26. Canceled

1 27 (Currently amended). ~~An~~ A computer-implemented auction method for holding an
2 auction for a product comprising the steps of:

3 receiving bids from at least one computer or from multiple computers within a
4 network of computers, for each product type of multiple product types in a
5 transaction, that include a condition concerning said product;

6 generating, using computing resources, a finite set of bids that include as an
7 element said bids that were received from said at least one computer or from multiple
8 computers within said network of computers; and
9 employing dynamic programming using said computing resources to generate,
10 using said ~~bid set~~ bids that were received in said receiving bids step, a subset of bids
11 wherein ~~the~~ a maximum gain is obtained within a range represented by ~~the~~ a count of
12 said product available for sale; and
13 identifying or accepting a bid from said subset of bids.